

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 10-161329

(43)Date of publication of application : 19.06.1998

(51)Int.Cl.

G03G 5/06
G03G 5/06
G03G 5/06
G03G 5/06
G03G 5/06
G03G 5/06
G03G 5/06

(21)Application number : 08-339006

(71)Applicant : RICOH CO LTD

(22)Date of filing : 04.12.1996

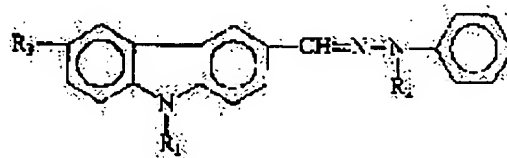
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(54) PHOTORECEPTOR FOR ELECTROPHOTOGRAPHY

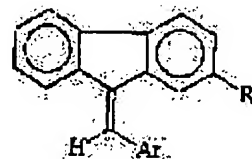
(57)Abstract:

PROBLEM TO BE SOLVED: To obtain a photoreceptor for electrophotography having high sensitivity, suppressing the lowering of potential by electrification, the lowering of its sensitivity and the rise of residual potential even after use repeated many times and capable of preventing the deterioration of the photosensitive layer by incorporating two kinds of specified compds. into a layer on an electrically conductive substrate.

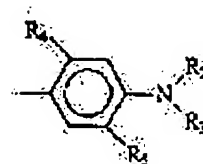
SOLUTION: This photoreceptor has a photosensitive layer contg. at least compds. represented by formulae I, II on the electrically conductive substrate. In the formula I, R₁ is lower alkyl, 2-hydroxyethyl or 2-chloroethyl, R₂ is lower alkyl, benzyl or phenyl and R₃ is H, halogen, lower alkyl, lower alkoxy, di-lower alkylamino or nitro. In the formula II, R₁ is H, halogen, cyano or lower alkyl and Ar is a group represented by formula III, etc. In the formula III, each of R₂ and R₃ is H, lower alkyl or benzyl and each of R₄ and R₅ is H, halogen, lower alkyl, etc.



I



II



III

LEGAL STATUS

[Date of request for examination] 08.02.2002

[Date of sending the examiner's decision of rejection] 21.11.2003

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection] 2003-24770

[Date of requesting appeal against examiner's decision of rejection] 22.12.2003

[Date of extinction of right]

Drawings are not displayable due to the volume of the data (more than 200 drawings).

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CLAIMS

[Claim(s)]

[Claim 1] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (2) on a conductive base material.

[Formula 1]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 2]

the inside of [type, and R1 -- a hydrogen atom, a halogen atom, a cyano group, and a low-grade alkyl group -- expressing -- Ar -- the following general formula (a) -- or (b) --

[Formula 3]

(-- however, R2, R3, and R6 express the benzyl which is not permuted [the low-grade alkyl group which is not permuted / a hydrogen atom, a permutation, or /, a permutation, or], and R4 and R5 express a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, or a JI low-grade alkylamino radical.) -- it expresses.]

[Claim 2] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (3) on a conductive base material.

[Formula 4]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 5]

(R1 expresses a hydrogen atom, low-grade alkyl group, and chloro ethyl group or a hydroxyethyl radical among a formula, R2 expresses a hydrogen atom or a halogen atom, and R3 expresses the heterocycle residue which is not permuted [the ring residue which is not permuted / the styryl radical which is not permuted / a low-grade alkyl group and JI low-grade alkylamino radical, the diaryl amino group, a permutation, or /, a permutation, or /, a permutation, or].)

[Claim 3] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (4) on a conductive base material.

[Formula 6]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a

formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 7]

(R1 expresses a low-grade alkyl group among a formula, and R2 expresses the heterocycle residue which is not permuted [the ring residue which is not permuted / the styryl radical which is not permuted / a low-grade alkyl group and JI low-grade alkylamino radical, the diaryl amino group, a permutation, or /, a permutation, or /, a permutation, or].)

[Claim 4] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (5) on a conductive base material.

[Formula 8]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 9]

(Among a formula, even if R1 and R2 are the same, they may differ from each other, and they express the aralkyl radical which is not permuted [a hydrogen atom, low-grade alkyl group and hydroxy low-grade alkyl group, a chloro low-grade alkyl group the acyl group of the carbon numbers 1-2 of alkyl, the cycloalkyl radical of the carbon numbers 5-6 of alkyl, a permutation, or].)

[Claim 5] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (6) on a conductive base material.

[Formula 10]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 11]

(R1, R3, and R4 express among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a hydrogen atom, the amino group, an alkoxy group, a thio alkoxy group, an aryloxy group, a methylene dioxy radical, a permutation, or /, a halogen atom, a permutation, or], and R<SUB>2 express the alkyl group or halogen atom which is not permuted [a hydrogen atom, an alkoxy group, a permutation, or].) However, as for all, R1, R2, R3, and R4 do not become a hydrogen atom. Moreover, k, l, m, and n are the integers of 1, 2, 3, or 4, and when each is the integer of 2, 3, or 4, even if R1, R2, R3, and R4 are the same, they may differ.

[Claim 6] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (7) on a conductive base material.

[Formula 12]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 13]

A-CH₂CH₂-Ar₁-CH₂CH₂-A (7)

Ar₁ expresses among [type the heterocycle radical which is not permuted [the aromatic hydrocarbon radical which is not permuted / a permutation or /, a permutation, or], and A is N-permutation carbazoyl radical or the following general formula (c) which is not permuted [a permutation or].

[Formula 14]

(-- however, Ar₂ is a heterocycle radical which is not permuted [the aromatic hydrocarbon radical which is not permuted / a permutation or /, a permutation, or], and R₁ and R₂ are aryl groups which are not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or].) -- it expresses.]

[Claim 7] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (8) on a conductive base material.

[Formula 15]

(R₁ expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R₂ expresses a low-grade alkyl group, benzyl, or a phenyl group, and R₃ expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 16]

(R₁ expresses a hydrogen atom, an alkyl group, an alkoxy group, an aryloxy group, a dialkylamino radical, the diaryl amino group, or a halogen atom among a formula, R₂ and R₃ express the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and Ar expresses the heterocycle radical of aromatic hydrocarbon machine ****.) n expresses the integer of 1 or 2.

[Claim 8] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (9) on a conductive base material.

[Formula 17]

(R₁ expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R₂ expresses a low-grade alkyl group, benzyl, or a phenyl group, and R₃ expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 18]

(R₁ and R₂ express among a formula the aryl which is not permuted [the alkyl group which is not permuted / the dialkylamino radical which is not permuted / a hydrogen atom, the amino group, a permutation, or /, an alkoxy group, a thio alkoxy group, an aryloxy group, a permutation, or /, a halogen atom, a permutation, or], and R₃ and R₄ express the alkyl group or halogen atom which is not permuted [a hydrogen atom, an alkoxy group, a permutation, or].) Ar expresses the heterocycle radical which is not permuted [the non-condensed multi-ring aromatic hydrocarbon radical which is not permuted / the monocyclic aromatic compound hydrocarbon group which is not permuted / a permutation or /, a permutation, or /, a permutation, or].

[Claim 9] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (10) on a conductive base material.

[Formula 19]

(R₁ expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R₂ expresses a low-grade alkyl group, benzyl, or a phenyl group, and R₃ expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 20]

The inside of [type and A are N-permutation carbazolyl radical or the following general formula (d).

[Formula 21]

(-- however, Ar is an aromatic hydrocarbon radical or a heterocycle radical, and R₁ and R₂ are aryl groups which are not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or].) -- expressing, R expresses an alkyl group, an alkoxy group, or a halogen atom. n expresses the integer of 0-4, and when n is two or more, even if R is the same, it may differ.]

[Claim 10] The electrophotography photo conductor characterized by coming to prepare the

sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (11) on a conductive base material.

[Formula 22]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 23]

The inside of [type and A are N-permutation carbazolyl radical N-substituted phenothiazinyl group or the following general formula (e) which is not permuted [9-anthryl radical, a permutation, or].

[Formula 24]

(-- however, Ar expresses the arylene radical which is not permuted [a permutation or], and R1 and R2 express the aryl group which is not permuted [the aralkyl radical which is not permuted / the alkyl group which is not permuted / a permutation or /, a permutation, or /, a permutation, or].) -- expressing, R expresses the aryl group which is not permuted [the aralkyl radical which is not permuted / the alkyl group which is not permuted / a hydrogen atom, a permutation, or /, a permutation, or /, a permutation, or]. m expresses the integer of 2-8 and n expresses the integer of 0 or 1.]

[Claim 11] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (12) on a conductive base material.

[Formula 25]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 26]

The inside of [type and A are N-permutation carbazolyl radical N-substituted phenothiazinyl group or the following general formula (f) which is not permuted [9-anthryl radical, a permutation, or].

[Formula 27]

(-- however, Ar expresses the arylene radical which is not permuted [a permutation or], and R1 and R2 express the aryl group which is not permuted [the aralkyl radical which is not permuted / the alkyl group which is not permuted / a permutation or /, a permutation, or /, a permutation, or].) -- expressing, R expresses the aryl group which is not permuted [the aralkyl radical which is not permuted / the alkyl group which is not permuted / a hydrogen atom, a permutation, or /, a permutation, or /, a permutation, or]. n expresses the integer of 0-8.]

[Claim 12] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (13) on a conductive base material.

[Formula 28]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 29]

(R1, R2, R3, R4, and R5 express a hydrogen atom, an alkyl group, an alkoxy group, or a halogen atom among a formula, and even if these are the same, they may differ.)

[Claim 13] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (14) on a conductive base material.

[Formula 30]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a

formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 31]

(R1 and R2 express among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and at least one of R1 and R2 expresses the aryl group which is not permuted [a permutation or].)

[Claim 14] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (15) on a conductive base material.

[Formula 32]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 33]

(R1 and R2 express among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and even if R1 and R2 are the same, they may differ.) R3 and R4 express a hydrogen atom, an alkyl group, an alkoxy group, or a halogen atom. m expresses the integer of 1, 2, and 3 and n expresses the integer of 1, 2, 3, and 4. When m or n is two or more, even if R3 and R4 are the same, they may differ.

[Claim 15] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (16) on a conductive base material.

[Formula 34]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 35]

(m expresses the integer of 0 or 1 among a formula, and X expresses an oxygen atom, a sulfur atom, -CH₂-, -CH₂CH₂-, -CH=CH-, or -N(R)- (however, R expresses the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or].)) R1 and R2 express an alkyl group, an aralkyl radical, a ring type aromatic series radical, or a heterocycle radical, and R3 and R4 express a hydrogen atom, an alkyl group, an alkoxy group, or a halogen atom. Ar expresses a ring type aromatic series radical or a heterocycle radical. n expresses the integer of 0 or 1. R3 may form the benzene ring with X.

[Claim 16] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (17) on a conductive base material.

[Formula 36]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 37]

(Ar expresses among a formula the biphenylene radical which is not permuted [a permutation or], R1, R2, and R3 express the alkyl group and alkoxy group which may have a hydrogen atom, a halogen atom, a cyano group, or a substituent, an aryloxy group, an alkyl sulfhydryl group, a methylene dioxy radical, the methylene dithio, and an aryl group, and even if R1, R2, and R3 are the same respectively, they may differ.) l, m, and n express the integer of 1-5, and when each is the integer of 2-5, even if R1, R2, and R3

are the same, they may differ.

[Claim 17] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (18) on a conductive base material.

[Formula 38]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 39]

(Ar expresses a phenylene group or a biphenylene radical among a formula, and R1 and R2 express the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or].) n expresses the integer of 1-4.

[Claim 18] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (19) on a conductive base material.

[Formula 40]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 41]

(Among the formula, A1 and A2 express the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or / a permutation, or], and even if respectively the same, they may differ.) Ar expresses the condensed multi-ring type hydrocarbon group which is not permuted [a permutation or].

[Claim 19] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (20) on a conductive base material.

[Formula 42]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 43]

(R1 and R2 express among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and n expresses the integer of 1 or 2.) R3 expresses the aryl group which is not permuted [the alkyl group which is not permuted / a hydrogen atom, a permutation, or /, a permutation, or], and R4 and R5 express the alkyl group which is not permuted [a hydrogen atom, the amino group, an alkoxy group, a thio alkoxy group, an aryloxy group, a permutation or] and a halogen atom. m expresses the integer of 1, 2, and 3 and l expresses the integer of 1, 2, 3, and 4. When l and m are two or more integers, even if R4 and R5 are the same, they may differ.

[Claim 20] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (21) on a conductive base material.

[Formula 44]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 45]

(R1 expresses among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and R2, R3, and R4 express the aryl group which is not permuted [the alkyl group which is not permuted / a hydrogen atom, the amino group, an alkoxy group, a thio alkoxy group, an aryloxy group, a methylene dioxy radical, a permutation, or /, a halogen atom, a permutation, or].) h expresses the integer of 1, 2, 3, and 4, and k and l express the integer of 1, 2, 3, 4, and 5. When h, k, and l are two or more integers, even if R2, R3, and R4 are the same, they may differ. n expresses the integer of 1, 2, 3, and 4, and m expresses the integer of 4-n. When m is two or more, R1 may be the same or may differ.

[Claim 21] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (22) on a conductive base material.

[Formula 46]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 47]

(A1 expresses among a formula the aromatic hydrocarbon radical which is not permuted [a permutation or], A2 expresses the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and A3 expresses the aryl group which is not permuted [the alkyl group which is not permuted / a hydrogen atom, a permutation, or /, a permutation, or].) n expresses the integer of m and 1, or 2, and m+n is 3. However, when n is m or 2, even if A1, A3, or A2 is the same, it may differ.

[Claim 22] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (23) on a conductive base material.

[Formula 48]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 49]

(Among the formula, R1 and R2 express the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or / a permutation, or], and even if respectively the same, they may differ.) However, 1 and 6-diamino pyrene compound is removed.

[Claim 23] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (24) on a conductive base material.

[Formula 50]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 51]

(R1 and R2 express among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or].)

[Claim 24] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (25) on a conductive base material.

[Formula 52]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a

formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 53]

(R expresses a low-grade alkyl group or benzyl among a formula, and X expresses the amino group permuted by a hydrogen atom, a low-grade alkyl group, a lower alkoxy group, a halogen atom, the nitro group, the amino group, the low-grade alkyl group, or benzyl.) n expresses the integer of 1 or 2.

[Claim 25] The electrophotography photo conductor characterized by coming to prepare the sensitization layer containing the compound shown by the following general formula (1) at least, and the compound shown by the following general formula (26) on a conductive base material.

[Formula 54]

(R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[Formula 55]

(R1 and R2 express among a formula the alkyl group which is not permuted [a hydrogen atom, a halogen atom, a nitro group, a cyano group, a permutation, or], R3 and R4 express the alkyl group which is not permuted [a hydrogen atom, a cyano group, an alkoxy carbonyl group, a permutation, or], and R5 expresses a hydrogen atom, a low-grade alkyl group, or an alkoxy group.) W expresses the alkyl group which is not permuted [a hydrogen atom, a permutation, or]. In the integer of 1-4, and l, the integer of 0-2 and m express the integer of 1 or 2, and n expresses [j / the integer of 1-5, and k] the integer of 1-3.

[Claim 26] The electrophotography photo conductor according to claim 1 to 25 characterized by containing one sort of the compound in which a sensitization layer becomes from the charge generating layer which uses a charge transportation layer and a charge generating ingredient as a principal component at least, and this charge transportation layer is shown by the compound shown by the general formula (1) at least, the general formula (2), or (26).

[Claim 27] The electrophotography photo conductor according to claim 1 to 25 characterized by consisting of a monolayer sensitization layer containing one sort of the compound in which a sensitization layer is shown by the compound shown by the charge generating ingredient and the general formula (1) at least, the general formula (2), or (26).

[Translation done.]

Drawings are not displayable due to the volume of the data (more than 200 drawings).

*** NOTICES ***

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1. This document has been translated by computer. So the translation may not reflect the original precisely.
 2. **** shows the word which can not be translated.
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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention is the high sensitivity used about the electrophotography photo conductor combining the detailed specific charge transportation ingredient, and the electrostatic property in repeat use, an image property, etc. are related with the electrophotography photo conductor excellent in good repeat stability many times.

[0002]

[Description of the Prior Art] In the electrophotography photo conductor of an organic system, in order to raise the sensibility, the electrophotography photo conductor of the functional discrete type which has a sensitization layer containing a charge generating ingredient and a charge transportation ingredient, and the electrophotography photo conductor of the functional discrete type which carried out the laminating of the charge generating layer which contains a charge generating ingredient especially, and the charge transportation layer containing a charge transportation ingredient attract attention, and are put in practical use. The mechanism of the electrostatic latent-image formation in the electrophotography photo conductor of this functional discrete type is as follows. That is, if an optical exposure is carried out after a photo conductor is charged, the charge generating ingredient which light was absorbed with the charge generating ingredient and absorbed light generates a charge carrier, this charge carrier will be injected into a charge transportation layer, it will move in the inside of a charge transportation layer (or sensitization layer) according to the electric field produced by electrification, and an electrostatic latent image will be formed by neutralizing the charge on the front face of a photo conductor. And the electrostatic latent image which did in this way and was formed in the photo conductor front face is visible-image-ized by developers, such as a toner, and a copy or a record image is obtained by imprinting the image on paper etc.

[0003] It is important for an electrophotography photo conductor for various properties, such as chemical stability to mechanical endurance, such as electrophotographic properties represented by sensibility, acceptance potential, potential holdout, potential stability, rest potential, the spectral characteristic, etc. and abrasion resistance, and heat, light, a discharge product, etc., to be required, to divide, and to excel in stability repeatedly by high sensitivity. Although the charge generating ingredient and charge transportation ingredient which are used for the electrophotography photo conductor of a functional discrete type are variously developed from the former and a certain amount of high influence is attained by the combination of a suitable charge generating ingredient and a charge transportation ingredient. If an electrophotography photo conductor is repeated many times and used, it has inadequate repeat stability that the fall of electrification potential, the fall of sensibility, the rise of rest potential, etc. occur, and sensitization layer membranes, such as film peeling of a sensitization layer and generating of a crack, deteriorate, and the image defect and greasing of a copy or a record image occur etc.

[0004]

[Problem(s) to be Solved by the Invention] Then, it is in offering the electrophotography photo conductor excellent in repeat stability which the technical problem of this invention solves such a trouble, and it is high sensitivity, and has little generating of the fall of electrification potential, the fall of sensibility, a rise of rest potential, etc. even if it uses it many times repeatedly, and does not have degradation of a sensitization layer membrane, and does not have generating of the image defect of a copy or a record image, or a greasing.

[0005]

[Means for Solving the Problem] The above-mentioned technical problem of this invention is attained by the electrophotography photo conductor characterized by coming to prepare the sensitization layer containing one sort of the compound shown by the compound shown by the following general formula (1) at least, the following general formula (2), or (26) on a conductive base material.

[0006]

[Formula 56]

[0007] (R1 expresses low-grade alkyl group and 2-hydroxyethyl radical or 2-chloro ethyl group among a formula, R2 expresses a low-grade alkyl group, benzyl, or a phenyl group, and R3 expresses a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, a JI low-grade alkylamino radical, or a nitro group.)

[0008]

[Formula 57]

[0009] the inside of [type, and R1 -- a hydrogen atom, a halogen atom, a cyano group, and a low-grade alkyl group -- expressing -- Ar -- the following general formula (a) -- or (b) --

[0010]

[Formula 58]

[0011] (-- however, R2, R3, and R6 express the benzyl which is not permuted [the low-grade alkyl group which is not permuted / a hydrogen atom, a permutation, or /, a permutation, or], and R4 and R5 express a hydrogen atom, a halogen atom, a low-grade alkyl group, a lower alkoxy group, or a JI low-grade alkylamino radical.) -- it expresses.]

[0012]

[Formula 59]

[0013] (R1 expresses a hydrogen atom, low-grade alkyl group, and chloro ethyl group or a hydroxyethyl radical among a formula, R2 expresses a hydrogen atom or a halogen atom, and R3 expresses the heterocycle residue which is not permuted [the ring residue which is not permuted / the styryl radical which is not permuted / a low-grade alkyl group and JI low-grade alkylamino radical, the diaryl amino group, a permutation, or /, a permutation, or /, a permutation, or].)

As a ring, the benzene ring, a naphthalene ring, an anthracene ring, etc. are mentioned, and a pyridine ring, a quinoxaline ring, a carbazole ring, etc. are mentioned as heterocycle.

[0014]

[Formula 60]

[0015] (R1 expresses a low-grade alkyl group among a formula, and R2 expresses the heterocycle residue which is not permuted [the ring residue which is not permuted / the styryl radical which is not permuted / a low-grade alkyl group and JI low-grade alkylamino radical, the diaryl amino group, a permutation, or /, a permutation, or /, a permutation, or].)

As a ring, the benzene ring, a naphthalene ring, an anthracene ring, etc. are mentioned, and a pyridine ring, a quinoxaline ring, a carbazole ring, etc. are mentioned as heterocycle.

[0016]

[Formula 61]

[0017] (Among a formula, even if R1 and R2 are the same, they may differ from each other, and they express the aralkyl radical which is not permuted [a hydrogen atom, low-grade alkyl group and hydroxy low-grade alkyl group, a chloro low-grade alkyl group the acyl group of the carbon numbers 1-2 of alkyl, the cycloalkyl radical of the carbon numbers 5-6 of alkyl, a permutation, or].)

[0018]

[Formula 62]

[0019] (R1, R3, and R4 express among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a hydrogen atom, the amino group, an alkoxy group, a thio alkoxy group, an aryloxy group, a methylene dioxy radical, a permutation, or /, a halogen atom, a permutation, or], and R2 expresses the alkyl group or halogen atom which is not permuted [a hydrogen atom, an alkoxy group, a permutation, or].) However, as for all, R1, R2, R3, and R4 do not become a hydrogen atom. Moreover, k, l, m, and n are the integers of 1, 2, 3, or 4, and when each is the integer of 2, 3, or 4, even if R1, R2, R3, and R4 are the same, they may differ.

[0020]

[Formula 63]

A-CH₂CH₂-Ar₁-CH₂CH₂-A (7)

[0021] Ar₁ expresses among [type the heterocycle radical which is not permuted [the aromatic hydrocarbon radical which is not permuted / a permutation or /, a permutation, or], and A is N-permutation carbazoyl radical or the following general formula (c) which is not permuted [a permutation or].

[0022]

[Formula 64]

[0023] (-- however, Ar₂ is a heterocycle radical which is not permuted [the aromatic hydrocarbon radical which is not permuted / a permutation or /, a permutation, or], and R1 and R2 are aryl groups which are not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or].) -- it expresses.]

[0024]

[Formula 65]

[0025] (R1 expresses a hydrogen atom, an alkyl group, an alkoxy group, an aryloxy group, a dialkylamino radical, the diaryl amino group, or a halogen atom among a formula, R2 and R3 express the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and Ar expresses the heterocycle radical of aromatic hydrocarbon machine ****.) n expresses the integer of 1 or 2.

[0026]

[Formula 66]

[0027] (R1 and R2 express among a formula the aryl which is not permuted [the alkyl group which is not permuted / the dialkylamino radical which is not permuted / a hydrogen atom, the amino group, a permutation, or /, an alkoxy group, a thio alkoxy group, an aryloxy group, a permutation, or /, a halogen atom, a permutation, or], and R3 and R4 express the alkyl group or halogen atom which is not permuted [a hydrogen atom, an alkoxy group, a permutation, or].) Ar expresses the heterocycle radical which is not permuted [the non-condensed multi-ring aromatic hydrocarbon radical which is not permuted / the monocyclic aromatic compound hydrocarbon group which is not permuted / a permutation or /, a permutation, or /, a permutation, or].

[0028]

[Formula 67]

[0029] The inside of [type and A are N-permutation carbazoyl radical or the following general formula (d).

[0030]

[Formula 68]

[0031] (-- however, Ar is an aromatic hydrocarbon radical or a heterocycle radical, and R1 and R2 are aryl groups which are not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or].) -- expressing, R expresses an alkyl group, an alkoxy group, or a halogen atom. n expresses the integer of 0-4, and when n is two or more, even if R is the same, it may differ.]

[0032]

[Formula 69]

[0033] The inside of [type and A are N-permutation carbazoyl radical N-substituted phenothiazinyl

group or the following general formula (e) which is not permuted [9-anthryl radical, a permutation, or].

[0034]

[Formula 70]

[0035] (-- however, Ar expresses the arylene radical which is not permuted [a permutation or], and R1 and R2 express the aryl group which is not permuted [the aralkyl radical which is not permuted / the alkyl group which is not permuted / a permutation or /, a permutation, or /, a permutation, or].) -- expressing, R expresses the aryl group which is not permuted [the aralkyl radical which is not permuted / the alkyl group which is not permuted / a hydrogen atom, a permutation, or /, a permutation, or /, a permutation, or]. m expresses the integer of 2-8 and n expresses the integer of 0 or 1.]

[0036]

[Formula 71]

[0037] The inside of [type and A are N-permutation carbazolyl radical N-substituted phenothiazinyl group or the following general formula (f) which is not permuted [9-anthryl radical, a permutation, or].

[0038]

[Formula 72]

[0039] (-- however, Ar expresses the arylene radical which is not permuted [a permutation or], and R1 and R2 express the aryl group which is not permuted [the aralkyl radical which is not permuted / the alkyl group which is not permuted / a permutation or /, a permutation, or /, a permutation, or].) -- expressing, R expresses the aryl group which is not permuted [the aralkyl radical which is not permuted / the alkyl group which is not permuted / a hydrogen atom, a permutation, or /, a permutation, or /, a permutation, or]. n expresses the integer of 0-8.]

[0040]

[Formula 73]

[0041] (R1, R2, R3, R4, and R5 express a hydrogen atom, an alkyl group, an alkoxy group, or a halogen atom among a formula, and even if these are the same, they may differ.)

[0042]

[Formula 74]

[0043] (R1 and R2 express among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and at least one of R1 and R2 expresses the aryl group which is not permuted [a permutation or].)

[0044]

[Formula 75]

[0045] (R1 and R2 express among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and even if R1 and R2 are the same, they may differ.) R3 and R4 express a hydrogen atom, an alkyl group, an alkoxy group, or a halogen atom. m expresses the integer of 1, 2, and 3 and n expresses the integer of 1, 2, 3, and 4. When m or n is two or more, even if R3 and R4 are the same, they may differ.

[0046]

[Formula 76]

[0047] (m expresses the integer of 0 or 1 among a formula, and X expresses an oxygen atom, a sulfur atom, -CH₂-, -CH₂CH₂-, -CH=CH-, or -N(R)- (however, R expresses the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or].).) R1 and R2 express an alkyl group, an aralkyl radical, a ring type aromatic series radical, or a heterocycle radical, and R3 and R4 express a hydrogen atom, an alkyl group, an alkoxy group, or a halogen atom. Ar expresses a ring type aromatic series radical or a heterocycle radical. n expresses the integer of 0 or 1. R3 may form the benzene ring with X.

[0048]

[Formula 77]

[0049] (Ar expresses among a formula the biphenylene radical which is not permuted [a permutation or], R1, R2, and R3 express the alkyl group and alkoxy group which may have a hydrogen atom, a

halogen atom, a cyano group, or a substituent, an aryloxy group, an alkyl sulfhydryl group, a methylene dioxy radical, the methylene dithio, and an aryl group, and even if R1, R2, and R3 are the same respectively, they may differ.) l, m, and n express the integer of 1-5, and when each is the integer of 2-5, even if R1, R2, and R3 are the same, they may differ.

[0050]

[Formula 78]

[0051] (Ar expresses a phenylene group or a biphenylene radical among a formula, and R1 and R2 express the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or].) n expresses the integer of 1-4.

[0052]

[Formula 79]

[0053] (Among the formula, A1 and A2 express the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or / a permutation, or], and even if respectively the same, they may differ.) Ar expresses the condensed multi-ring type hydrocarbon group which is not permuted [a permutation or].

[0054]

[Formula 80]

[0055] (R1 and R2 express among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and n expresses the integer of 1 or 2.) R3 expresses the aryl group which is not permuted [the alkyl group which is not permuted / a hydrogen atom, a permutation, or /, a permutation, or], and R4 and R5 express the alkyl group which is not permuted [a hydrogen atom, the amino group, an alkoxy group, a thio alkoxy group, an aryloxy group, a permutation or] and a halogen atom. m expresses the integer of 1, 2, and 3 and l expresses the integer of 1, 2, 3, and 4. When l and m are two or more integers, even if R4 and R5 are the same, they may differ.

[0056]

[Formula 81]

[0057] (R1 expresses among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and R2, R3, and R4 express the aryl group which is not permuted [the alkyl group which is not permuted / a hydrogen atom, the amino group, an alkoxy group, a thio alkoxy group, an aryloxy group, a methylene dioxy radical, a permutation, or /, a halogen atom, a permutation, or].) h expresses the integer of 1, 2, 3, and 4, and k and l express the integer of 1, 2, 3, 4, and 5. When h, k, and l are two or more integers, even if R2, R3, and R4 are the same, they may differ. n expresses the integer of 1, 2, 3, and 4, and m expresses the integer of 4-n. When m is two or more, R1 may be the same or may differ.

[0058]

[Formula 82]

[0059] (A1 expresses among a formula the aromatic hydrocarbon radical which is not permuted [a permutation or], A2 expresses the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or], and A3 expresses the aryl group which is not permuted [the alkyl group which is not permuted / a hydrogen atom, a permutation, or /, a permutation, or].) n expresses the integer of m and 1, or 2, and m+n is 3. However, when n is m or 2, even if A1, A3, or A2 is the same, it may differ.

[0060]

[Formula 83]

[0061] (Among the formula, R1 and R2 express the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or / a permutation, or], and even if respectively the same, they may differ.) However, 1 and 6-diamino pyrene compound is removed.

[0062]

[Formula 84]

[0063] (R1 and R2 express among a formula the aryl group which is not permuted [the alkyl group which is not permuted / a permutation or /, a permutation, or].)

[0064]

[Formula 85]

[0065] (R expresses a low-grade alkyl group or benzyl among a formula, and X expresses the amino group permuted by a hydrogen atom, a low-grade alkyl group, a lower alkoxy group, a halogen atom, the nitro group, the amino group, the low-grade alkyl group, or benzyl.) n expresses the integer of 1 or 2.

[0066]

[Formula 86]

[0067] (R1 and R2 express among a formula the alkyl group which is not permuted [a hydrogen atom, a halogen atom, a nitro group, a cyano group, a permutation, or], R3 and R4 express the alkyl group which is not permuted [a hydrogen atom, a cyano group, an alkoxy carbonyl group, a permutation, or], and R5 expresses a hydrogen atom, a low-grade alkyl group, or an alkoxy group.) W expresses the alkyl group which is not permuted [a hydrogen atom, a permutation, or]. In the integer of 1-4, and l, the integer of 0-2 and m express the integer of 1 or 2, and n expresses [j / the integer of 1-5, and k] the integer of 1-3.

[0068] According to this invention, by using the combination of the above-mentioned specific compound for a sensitization layer as a charge transportation ingredient Even if it is high sensitivity and uses it many times repeatedly, the fall of electrification potential, the fall of sensibility, Generating of a rise of rest potential etc. can obtain the electrophotography photo conductor excellent in repeat stability which does not have degradation of sensitization layer membranes, such as film peeling of a sensitization layer and generating of a crack, and does not have generating of the image defect of a copy or a record image, or a greasing few. Although the compound shown by the compound shown by the above-mentioned general formula (1) and the general formula (2) thru/or (26) was indicated by JP,2-272569,A, JP,2-272570,A, etc., it was not found out by using in the above specific combination that the special effectiveness which controls generating of the image defect based on degradation of the above sensitization layers arises.

[0069]

[Embodiment of the Invention] This invention is explained below at a detail. Drawing 1 is the sectional view showing the electrophotography photo conductor which has a monolayer sensitization layer, and the monolayer sensitization layer 15 is formed on the conductive base material 11. Drawing 2 and drawing 3 are the sectional views showing the example of a configuration of the electrophotography photo conductor which has a laminating sensitization layer, and have the composition that the laminating of the charge transportation layer 19 which uses as a principal component the charge generating layer 17 which uses a charge generating ingredient as a principal component, and a charge transportation ingredient was carried out. Such a monolayer sensitization layer 15 or the charge transportation layer 19 in a laminating sensitization layer contains the charge transportation ingredient which consists of combination of the above-mentioned specific compound.

[0070] What shows the conductivity below the volume resistivity cm of 10¹⁰ohms as an electric conduction **** base material 11, Metallic oxides, such as metals, such as aluminum, nickel, chromium, Nichrome, copper, silver, gold, and platinum, or tin oxide, and indium oxide, for example, by vacuum evaporation or sputtering Tubing which carried out surface treatment of plates, such as a thing covered on the plastics or paper of the shape of the shape of a film and a cylinder or aluminum, an aluminium alloy, nickel, and stainless steel, and them by cutting, super-finishing, polish, etc. after element-tube-izing can be used.

[0071] Next, a sensitization layer is explained from the configuration of the laminating sensitization layer to which the laminating of the charge generating layer 17 and the charge transportation layer 19 was carried out first. The charge generating layer 17 is a layer which uses a charge generating ingredient as a principal component, and all of an inorganic or organic charge generating ingredient can use it as a charge generating ingredient. as the example of representation of a charge generating ingredient -- a monoazo pigment, a disazo pigment, a tris azo pigment, a perylene system pigment, and peri -- non, a system pigment, Quinacridone system pigment, quinone system condensed multi-ring compound,

SUKUA rucksack acid system color, phthalocyanine pigment, naphthalocyanine system pigment, AZURENIUMU salt system color, selenium, and selenium-tellurium, a selenium-arsenic alloy, an amorphous silicon, etc. are mentioned, and these are independent -- or two or more sorts are mixed and it is used. What is necessary is for a ball mill, attritor, a sand mill, etc. to distribute a charge generating ingredient with binder resin using suitable solvents, such as a tetrahydrofuran, a cyclohexanone, dioxane, 2-butanone, and dichloroethane, if needed, and to apply the dispersion liquid on an electric conduction **** base material or a charge transportation layer etc., and just to make it dry, in order to form the charge generating layer 17. As the method of application of dispersion liquid, a dip coating method, a spray coating method, the bead coat method, etc. can be used.

[0072] As binder resin used if needed, a polyamide, polyurethane, polyester, an epoxy resin, the poly ketone, a polycarbonate, silicone resin, acrylic resin, a polyvinyl butyral, a polyvinyl formal, a polyvinyl ketone, polystyrene, polyacrylamide, etc. are mentioned. the amount of the binder resin used -- ** -- if it carries out, below 2 weight sections are suitable to the charge generating ingredient 1 weight section. The charge generating layer 17 can also be formed by the well-known vacuum thin film producing method again. About 0.01-5 micrometers is suitable for the thickness of the charge generating layer 17, and its 0.1-2 micrometers are especially desirable.

[0073] What is necessary is to make a suitable solvent dissolve thru/or distribute one sort of the compound shown by the compound shown by the general formula (1), the general formula (2), or (26) with binder resin, to prepare the coating liquid for charge transportation layers, to apply this on an electric conduction **** base material or a charge generating layer etc., and just to make it dry, in order to form the charge transportation layer 19. It is desirable that there is at least one sort chosen from the compound shown by the compound general formula (1) Shown, the general formula (2), or (26) as a mixing ratio with the compound shown by the compound shown by the general formula (1), the general formula (2), or (26) in the range of 5:95-95:5.

[0074] As binder resin used for the charge transportation layer 19 Polystyrene, a styrene acrylonitrile copolymer, a styrene-butadiene copolymer, A styrene maleic anhydride copolymer, polyester, a polyvinyl chloride, A vinyl chloride vinyl acetate copolymer, polyvinyl acetate, a polyvinylidene chloride, Polyarylate, phenoxy resin, a polycarbonate, cellulose acetate resin, The thermoplasticity of ethyl cellulose resin, a polyvinyl butyral, a polyvinyl formal, polyvinyl toluene, acrylic resin, silicone resin, an epoxy resin, melamine resin, urethane resin, phenol resin, an alkyd resin, etc. or thermosetting resin is mentioned. As a solvent used in case the coating liquid for charge transportation layers is prepared, a tetrahydrofuran, dioxane, toluene, 2-butanone, mono-chlorobenzene, dichloroethane, a methylene chloride, etc. are mentioned.

[0075] Besides the compound shown in the charge transportation layer 19 by the compound shown by the general formula (1), the general formula (2), or (26), a still better known electronic transportability charge transportation ingredient and/or an electron hole transportability charge transportation ingredient may be added, and a plasticizer and a RE ** ring agent may be added. As a plasticizer, what is used as a plasticizer of common resin, such as dibutyl phthalate and dioctyl phthalate, can use it as it is, and about 0 - 30 % of the weight is suitable for the amount used to binder resin. As a leveling agent, silicone oil, such as dimethyl silicone oil and methylphenyl silicone oil, and the polymer or oligomer which has a perfluoroalkyl radical in a side chain is used, and 0 - 1 % of the weight is suitable for the amount used to binder resin. As thickness of the charge transportation layer 19, about 5-100 micrometers is desirable.

[0076] Next, the monolayer sensitization layer 15 is explained. What is necessary is to make a suitable solvent dissolve thru/or distribute one sort of the compound shown by the compound shown by the charge generating ingredient and the general formula (1) at least, the general formula (2), or (26) with binder resin, to apply this on an electric conduction **** base material etc., and just to make it dry, in order to form the monolayer sensitization layer 15. The binder resin which the binder resin previously mentioned in the charge transportation layer 19 could be used as it was as binder resin, and also was mentioned in the charge generating layer 17 may be mixed and used. Moreover, one sort of the compound shown by the compound shown in the eutectic complex formed from a pyrylium system color and the bisphenol A system polycarbonate by the general formula (1), the general formula (2), or (26)

can be added, and a monolayer sensitization layer can also be formed. Furthermore, the monolayer sensitization layer which becomes considering one sort of the compound shown by the compound shown by binder resin and the general formula (1), the general formula (2), or (26) as a principal component, and does not contain a charge generating ingredient as an active principle is also useful as a sensitization layer which has sensibility in blue glow - ultraviolet radiation. As a mixing ratio with the compound shown by the compound shown by the general formula (1) in a monolayer sensitization layer, the general formula (2), or (26), the range of 5:95-95:5 is desirable. Moreover, as thickness of a monolayer sensitization layer, about 5-100 micrometers is suitable.

[0077] The example of the compound shown by the compound shown by the general formula (1) and the general formula (2) thru/or (26) is shown in following Table 1 and 2 thru/or 199.

[0078]

[Table 1]

[0079]

[Table 2]

[0080]

[Table 3]

[0081]

[Table 4]

[0082]

[Table 5]

[0083]

[Table 6]

[0084]

[Table 7]

[0085]

[Table 8]

[0086]

[Table 9]

[0087]

[Table 10]

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[Table 11]

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[Table 12]

[0090]

[Table 13]

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[Table 14]

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[Table 15]

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[Table 16]

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[Table 198]
[0276]
[Table 199]

[0277] An under-coating layer can be prepared in the electrophotography photo conductor of this invention between the conductive base material 11 and a sensitization layer. Although an under-coating layer generally uses resin as a principal component, considering applying on it that a solvent is also about a sensitization layer, as for these resin, it is desirable that it is high resin of solubility-proof to a common organic solvent. As such resin, the hardening mold resin which forms a three-dimensional network, such as alcoholic fusibility resin, such as water soluble resin, such as polyvinyl alcohol, casein, and sodium polyacrylate, copolyamide, and methoxymethyl-ized nylon, polyurethane, melamine resin, alkyd-melamine resin, and an epoxy resin, is mentioned. Moreover, the impalpable powder of the metallic oxide which can be illustrated by titanium oxide, a silica, the alumina, the zirconium dioxide, the tin oxide, indium oxide, etc. for moire prevention, reduction of rest potential, etc. may be added to an under-coating layer. These under-coating layers can be formed using a suitable solvent and a coating method like the above-mentioned sensitization layer. Furthermore, the metal oxide layer which used the silane coupling agent, the titanium coupling agent, the chromium coupling agent, etc., for example, was formed with the sol-gel method etc. as an under-coating layer is also useful. In addition, what prepared what formed aluminum 2O3 by anodic oxidation, the organic substance, such as the poly PARAKI silylene (parylene), and the inorganic substance of SiO, SnO2, TiO2, ITO, and CeO2 grade by the vacuum thin film producing method can be used for the under-coating layer of this invention good. As thickness of an under-coating layer, 5 micrometers or less are suitable.

[0278] Moreover, a protective layer may be prepared on a sensitization layer for the purpose of sensitization layer protection at the electrophotography photo conductor of this invention. As an ingredient used for this, ABS plastics, ACS resin, an olefin-vinyl monomer copolymer, A chlorinated polyether, allylic resin, phenol resin, polyacetal, A polyamide, polyamidoimide, polyacrylate, the poly allyl compound sulfone, Polybutylene, polybutylene terephthalate, a polycarbonate, polyether sulphone, Polyethylene, polyethylene terephthalate, polyimide, acrylic resin, Resin, such as the poly methyl pentene, polypropylene, polyphenylene oxide, polysulfone, an AS resin, AB resin, BS resin, polyurethane, a polyvinyl chloride, a polyvinylidene chloride, and an epoxy resin, is mentioned. To a protective layer, in addition to this, what distributed inorganic materials, such as titanium oxide, tin oxide, and potassium titanate, to a fluororesin like polytetrafluoroethylene, silicone resin, and these resin can be added in order to raise abrasion resistance. The usual applying method is adopted as a method of forming a protective layer. In addition, about 0.5-10 micrometers is suitable for protection layer thickness. Moreover, well-known ingredients, such as i-C, a-SiC, etc. which were formed by the vacuum thin film producing method above else, can also be used as a protective layer.

[0279] Furthermore, another interlayer can also be prepared in the electrophotography photo conductor of this invention between a sensitization layer and a protective layer. Generally a polyamide, alcoholic fusibility nylon, a water-soluble polyvinyl butyral, a polyvinyl butyral, polyvinyl alcohol, etc. are mentioned to the middle class as these resin, using binder resin as a principal component. As an interlayer's method of forming, the usual applying method is adopted like the above-mentioned. In addition, about 0.05-2 micrometers is suitable for an interlayer's thickness.

[0280]

[Example] Next, although an example is shown, an example does not explain this invention in detail and this invention is not restrained by the example. In addition, all the sections in an example are the weight sections. Examples 1-4 and the examples 1-4 of a comparison explain the case where the compound first shown by the general formula (1) and the general formula (2) as a charge transportation ingredient is used together.

[0281] On the aluminum cylinder with example 1 outer diameter of 70mm, sequential spreading is carried out, the undercoating layer coating liquid of the following presentation, charge generating layer coating liquid, and charge transportation layer coating liquid were dried, the undercoating layer with a thickness of 4 micrometers, the 0.2 micrometers charge generating layer, and the 22-micrometer charge transportation layer were formed, and the electrophotography photo conductor of this invention was produced.

[Undercoating layer coating liquid]

Oil free alkyd resin (the Dainippon Ink chemistry company make: ** KKORAITO M6401) The 15 sections Melamine resin (the Dainippon Ink chemistry company make: super BEKKAMIN G-821) The ten sections Titanium dioxide (Ishihara Sangyo [Kaisha, Ltd.] make: TIPAQUE R-670) The 50 sections 2-butanone The 40 sections [charge generating layer coating liquid]
Charge generating ingredient of the following structure expression (A) The five sections [0282]
[Formula 87]

[0283]

Polyvinyl butyral resin (DENKI KAGAKU KOGYO [K.K.] make: DENKA butyral #5000-A) The two sections Cyclohexanone The 200 sections 4-methyl-2-pentanone The 150 sections [charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.7 of said table 3 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0284] In the charge transportation layer coating liquid of example of comparison 1 example 1, the electrophotography photo conductor of the example of a comparison was produced like the example 1 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.7 of Table 3.

[0285] Sealing was performed after carrying out anodizing of the example 2 aluminum cylinder front face. Besides, sequential spreading is carried out, the following charge generating layer coating liquid and charge transportation layer coating liquid were dried, the charge generating layer with a thickness of 0.2 micrometers and the 20-micrometer charge transportation layer were formed, and the electrophotography photo conductor of this invention was produced.

[Charge generating layer coating liquid]

X type non-metal phthalocyanine (the Dainippon Ink chemistry company make: fast gene blue 8120B) The three sections Polyvinyl butyral resin (Sekisui Chemical [Co., Ltd.] make: S lek BL-S) The one section Cyclohexanone The 250 sections Tetrahydrofuran The 50 sections [charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.19 of said table 4 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0286] In the charge transportation layer coating liquid of example of comparison 2 example 2, the electrophotography photo conductor of the example of a comparison was produced like the example 2 except not adding the compound of compound No.19 of Table 4.

[0287] On the example 3 aluminum cylinder, sequential spreading is carried out, the undercoating layer coating liquid of the following presentation, charge generating layer coating liquid, and charge transportation layer coating liquid were dried, the undercoating layer with a thickness of 2 micrometers, the 0.2 micrometers charge generating layer, and the 20-micrometer charge transportation layer were formed, and the electrophotography photo conductor of this invention was produced.

[Undercoating layer coating liquid]

Alcoholic fusibility nylon (Toray Industries [, Inc.] make: Amilan CM-8000) The ten sections Titanium dioxide (Ishihara Sangyo [Kaisha, Ltd.] make: TIPAQUE CR-EL) The 40 sections Methanol The 120 sections Butanol The 60 sections [charge generating layer coating liquid]

Charge generating ingredient of the following structure expression (B) The three sections [0288]
[Formula 88]

[0289]

Polyester (Toyobo [Co., Ltd.] make: Byron 200) The one section Cyclohexanone The 150 sections Cyclohexane The 100 sections [charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.31 of said table 5 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The 10 section Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0290] In the charge transportation layer coating liquid of example of comparison 3 example 3, the electrophotography photo conductor of the example of a comparison was produced like the example 3

except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.31 of Table 5.

[0291] On the aluminum cylinder with example 4 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 26 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

Charge generating ingredient of the following structure expression (C) The three sections [0292]

[Formula 89]

[0293]

Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections Compound of compound No.5 of said table 1 The ten sections Compound of compound No.7 of said table 3 The eight sections Tetrahydrofuran The 200 sections [0294] The electrophotography photo conductor of the example of a comparison was produced like the example 4 except having formed the monolayer sensitization layer with a thickness of 23 micrometers except for the compound of compound No.5 of Table 1 using the compound 18 section of compound No.7 of Table 3 in the sensitization layer coating liquid of example of comparison 4 example 4.

[0295] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured as follows using the evaluation equipment currently indicated by JP,60-100167,A. the light exposure E required on the corona discharge electrical potential difference of -6.0kV (or +5.6kV) to attenuate the potential V_m 20 seconds after electrification (V), the potential V_o 20 seconds after a dark decay (V), and potential V_o to one half -- one half [lux-sec] was measured. Potential retention = it is defined as V_o/V_m . Moreover, each electrophotography photo conductor was carried in the electrophotography copying machine (what was converted so that forward electrification of FT-3300, the Ricoh Co., Ltd. make, or the photo conductor could be carried out), the copy of 30,000 continuation was performed, and the existence of an image defect (abnormality image) was judged by viewing. Moreover, $V_m(V)$ $V_o(V)$ $E1/2[\text{lux-sec}]$ was measured by the same approach as the above about each electrophotography photo conductor after copy test termination. The result is shown in Table 200.

[0296]

[Table 200]

[0297] Next, examples 5-8 and the examples 5-8 of a comparison explain the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (3) are used together.

[0298] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 5 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.15 of said table 8 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0299] In the charge transportation layer coating liquid of example of comparison 5 example 5, the electrophotography photo conductor of the example of a comparison was produced like the example 5 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.15 of Table 8.

[0300] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 6 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.67 of said table 12 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0301] In the charge transportation layer coating

liquid of example of comparison 6 example 6, the electrophotography photo conductor of the example of a comparison was produced like the example 6 except not adding the compound of compound No.67 of Table 12.

[0302] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 7 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.74 of said table 13 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The 10 section Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections

[0303] The electrophotography photo conductor of the example of a comparison was produced like the example 7 except having used the compound 8 section of compound No.74 of Table 13 except for the compound of compound No.30 of Table 2 in the charge transportation layer coating liquid of example of comparison 7 example 7.

[0304] On the aluminum cylinder with example 8 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.15 of said table 8 The eight sections Tetrahydrofuran The 200 sections [0305] The electrophotography photo conductor of the example of a comparison was produced like the example 8 except having used the compound 18 section of compound No.15 of Table 8 except for the compound of compound No.5 of Table 1 in the sensitization layer coating liquid of example of comparison 8 example 8.

[0306] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 201.

[0307]

[Table 201]

[0308] Next, examples 9-12 and the examples 9-12 of a comparison explain the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (4) are used together.

[0309] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 9 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.8 of said table 16 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0310] In the charge transportation layer coating liquid of example of comparison 9 example 9, the electrophotography photo conductor of the example of a comparison was produced like the example 9 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.8 of Table 16.

[0311] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 10 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.25 of said table 18 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0312] In the charge transportation layer coating

liquid of example of comparison 10 example 10, the electrophotography photo conductor of the example of a comparison was produced like the example 10 except not adding the compound of compound No.25 of Table 18.

[0313] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 11 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.45 of said table 19 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The 10 section Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections

[0314] In the charge transportation layer coating liquid of example of comparison 11 example 11, the electrophotography photo conductor of the example of a comparison was produced like the example 11 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.45 of Table 19.

[0315] On the aluminum cylinder with example 12 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.8 of said table 16 The eight sections Tetrahydrofuran The 200 sections [0316] In the sensitization layer coating liquid of example of comparison 12 example 12, the electrophotography photo conductor of the example of a comparison was produced like the example 12 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.8 of Table 16.

[0317] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 202.

[0318]

[Table 202]

[0319] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (5) are used together is explained from examples 13-16 and the examples 13-16 of a comparison.

[0320] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 13 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.3 of said table 20 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0321] In the charge transportation layer coating liquid of example of comparison 13 example 13, the electrophotography photo conductor of the example of a comparison was produced like the example 13 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.3 of Table 20.

[0322] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 14 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.12 of said table 20 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0323] In the charge transportation layer coating

liquid of example of comparison 14 example 14, the electrophotography photo conductor of the example of a comparison was produced like the example 14 except not adding the compound of compound No.12 of Table 20.

[0324] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 15 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.13 of said table 20 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You

pyrone Z-300) The 10 section Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0325] In the charge transportation layer coating liquid of example of comparison 15 example 15, the electrophotography photo conductor of the example of a comparison was produced like the example 15 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.13 of Table 20.

[0326] On the aluminum cylinder with example 16 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.3 of said table 20 The eight sections Tetrahydrofuran The 200 sections [0327] In the sensitization layer coating liquid of example of comparison 16 example 16, the electrophotography photo conductor of the example of a comparison was produced like the example 16 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.3 of Table 20.

[0328] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 203.

[0329]

[Table 203]

[0330] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (6) are used together is explained from examples 17-20 and the examples 17-20 of a comparison.

[0331] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 17 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.43 of said table 22 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0332] In the charge transportation layer coating liquid of example of comparison 17 example 17, the electrophotography photo conductor of the example of a comparison was produced like the example 17 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.43 of Table 22.

[0333] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 18 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.13 of said table 1 The eight sections Compound of compound No.85 of said table 23 2 section polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0334] In the charge transportation layer coating liquid of example

of comparison 18 example 18, the electrophotography photo conductor of the example of a comparison was produced like the example 18 except not adding the compound of compound No.85 of Table 23.

[0335] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 19 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.127 of said table 25 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0336] In the charge transportation layer coating liquid of example of comparison 19 example 19, the electrophotography photo conductor of the example of a comparison was produced like the example 19 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.127 of Table 25.

[0337] On the aluminum cylinder with example 20 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.43 of said table 22 The eight sections Tetrahydrofuran The 200 sections [0338] In the sensitization layer coating liquid of example of comparison 20 example 20, the electrophotography photo conductor of the example of a comparison was produced like the example 20 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.43 of Table 22.

[0339] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 204.

[0340]

[Table 204]

[0341] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (7) are used together is explained from examples 21-24 and the examples 21-24 of a comparison.

[0342] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 21 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.73 of said table 33 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0343] In the charge transportation layer coating liquid of example of comparison 21 example 21, the electrophotography photo conductor of the example of a comparison was produced like the example 21 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.73 of Table 33.

[0344] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 22 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.138 of said table 43 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0345] In the charge transportation layer coating liquid of example of comparison 22 example 22, the electrophotography photo conductor of the

example of a comparison was produced like the example 22 except not adding the compound of compound No.138 of Table 43.

[0346] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 23 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.291 of said table 62 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0347] In the charge transportation layer coating liquid of example of comparison 23 example 23, the electrophotography photo conductor of the example of a comparison was produced like the example 23 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.291 of Table 62.

[0348] On the aluminum cylinder with example 24 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.73 of said table 33 The eight sections Tetrahydrofuran The 200 sections [0349] In the sensitization layer coating liquid of example of comparison 24 example 24, the electrophotography photo conductor of the example of a comparison was produced like the example 24 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.73 of Table 33.

[0350] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 205.

[0351]

[Table 205]

[0352] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (8) are used together is explained from examples 25-28 and the examples 25-28 of a comparison.

[0353] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 25 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.31 of said table 73 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0354] In the charge transportation layer coating liquid of example of comparison 25 example 25, the electrophotography photo conductor of the example of a comparison was produced like the example 25 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.31 of Table 73.

[0355] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 26 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.40 of said table 74 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0356] In the charge transportation layer coating liquid of example of comparison 26 example 26, the electrophotography photo conductor of the example

of a comparison was produced like the example 26 except not adding the compound of compound No.40 of Table 74.

[0357] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 27 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.87 of said table 79 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You

pyrone Z-300) The 10 section Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0358] In the charge transportation layer coating liquid of example of comparison 27 example 27, the electrophotography photo conductor of the example of a comparison was produced like the example 27 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.87 of Table 79.

[0359] On the aluminum cylinder with example 28 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.31 of said table 73 The eight sections Tetrahydrofuran The 200 sections [0360] In the sensitization layer coating liquid of example of comparison 28 example 28, the electrophotography photo conductor of the example of a comparison was produced like the example 28 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.31 of Table 73.

[0361] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 206.

[0362]

[Table 206]

[0363] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (9) are used together is explained from examples 29-32 and the examples 29-32 of a comparison.

[0364] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 29 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.49 of said table 85 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0365] In the charge transportation layer coating liquid of example of comparison 29 example 29, the electrophotography photo conductor of the example of a comparison was produced like the example 29 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.49 of Table 85.

[0366] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 30 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.66 of said table 86 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0367] In the charge transportation layer coating liquid of example of comparison 30 example 30, the electrophotography photo conductor of the example

of a comparison was produced like the example 30 except not adding the compound of compound No.66 of Table 86.

[0368] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 31 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.159 of said table 94 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0369] In the charge transportation layer coating liquid of example of comparison 31 example 31, the electrophotography photo conductor of the example of a comparison was produced like the example 31 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.159 of Table 94.

[0370] On the aluminum cylinder with example 32 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.49 of said table 85 The eight sections Tetrahydrofuran The 200 sections [0371] In the sensitization layer coating liquid of example of comparison 32 example 32, the electrophotography photo conductor of the example of a comparison was produced like the example 32 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.49 of Table 85.

[0372] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 207.

[0373]

[Table 207]

[0374] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (10) are used together is explained from examples 33-36 and the examples 33-36 of a comparison.

[0375] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 33 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.15 of said table 100 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0376] In the charge transportation layer coating liquid of example of comparison 33 example 33, the electrophotography photo conductor of the example of a comparison was produced like the example 33 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.15 of Table 100.

[0377] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 34 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.35 of said table 102 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0378] In the charge transportation layer coating liquid of example of comparison 34 example 34, the electrophotography photo conductor of the

example of a comparison was produced like the example 34 except not adding the compound of compound No.35 of Table 102.

[0379] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 35 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.67 of said table 104 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0380] In the charge transportation layer coating liquid of example of comparison 35 example 35, the electrophotography photo conductor of the example of a comparison was produced like the example 35 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.67 of Table 104.

[0381] On the aluminum cylinder with example 36 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.15 of said table 100 The eight sections Tetrahydrofuran The 200 sections [0382] In the sensitization layer coating liquid of example of comparison 36 example 36, the electrophotography photo conductor of the example of a comparison was produced like the example 36 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.15 of Table 100.

[0383] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 208.

[0384]

[Table 208]

[0385] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (11) are used together is explained from examples 37-40 and the examples 37-40 of a comparison.

[0386] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 37 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.35 of said table 111 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0387] In the charge transportation layer coating liquid of example of comparison 37 example 37, the electrophotography photo conductor of the example of a comparison was produced like the example 37 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.35 of Table 111.

[0388] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 38 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.63 of said table 114 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0389] In the charge transportation layer coating liquid of example of comparison 38 example 38, the electrophotography photo conductor of the

example of a comparison was produced like the example 38 except not adding the compound of compound No.63 of Table 114.

[0390] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 39 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.102 of said table 118 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0391] In the charge transportation layer coating liquid of example of comparison 39 example 39, the electrophotography photo conductor of the example of a comparison was produced like the example 39 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.102 of Table 118.

[0392] On the aluminum cylinder with example 40 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.35 of said table 111 The eight sections Tetrahydrofuran The 200 sections [0393] In the sensitization layer coating liquid of example of comparison 40 example 40, the electrophotography photo conductor of the example of a comparison was produced like the example 40 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.35 of Table 111.

[0394] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 209.

[0395]

[Table 209]

[0396] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (12) are used together is explained from examples 41-44 and the examples 41-44 of a comparison.

[0397] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 41 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.4 of said table 125 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0398] In the charge transportation layer coating liquid of example of comparison 41 example 41, the electrophotography photo conductor of the example of a comparison was produced like the example 41 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.4 of Table 125.

[0399] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 42 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.44 of said table 129 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0400] In the charge transportation layer coating liquid of example of comparison 42 example 42, the electrophotography photo conductor of the

example of a comparison was produced like the example 42 except not adding the compound of compound No.44 of Table 129.

[0401] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 43 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.48 of said table 129 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0402] In the charge transportation layer coating liquid of example of comparison 43 example 43, the electrophotography photo conductor of the example of a comparison was produced like the example 43 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.48 of Table 129.

[0403] On the aluminum cylinder with example 44 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.4 of said table 125 The eight sections Tetrahydrofuran The 200 sections [0404] In the sensitization layer coating liquid of example of comparison 44 example 44, the electrophotography photo conductor of the example of a comparison was produced like the example 44 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.4 of Table 125.

[0405] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 210.

[0406]

[Table 210]

[0407] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (13) are used together is explained from examples 45-48 and the examples 45-48 of a comparison.

[0408] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 45 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.10 of said table 131 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0409] In the charge transportation layer coating liquid of example of comparison 45 example 45, the electrophotography photo conductor of the example of a comparison was produced like the example 45 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.10 of Table 131.

[0410] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 46 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.22 of said table 131 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0411] In the charge transportation layer coating liquid of example of comparison 46 example 46, the electrophotography photo conductor of the

example of a comparison was produced like the example 46 except not adding the compound of compound No.22 of Table 131.

[0412] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 47 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.33 of said table 132 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0413] In the charge transportation layer coating liquid of example of comparison 47 example 47, the electrophotography photo conductor of the example of a comparison was produced like the example 47 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.33 of Table 132.

[0414] On the aluminum cylinder with example 48 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.10 of said table 131 The eight sections Tetrahydrofuran The 200 sections [0415] In the sensitization layer coating liquid of example of comparison 48 example 48, the electrophotography photo conductor of the example of a comparison was produced like the example 48 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.10 of Table 131.

[0416] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 211.

[0417]

[Table 211]

[0418] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (14) are used together is explained from examples 49-52 and the examples 49-52 of a comparison.

[0419] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 49 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.3 of said table 133 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0420] In the charge transportation layer coating liquid of example of comparison 49 example 49, the electrophotography photo conductor of the example of a comparison was produced like the example 49 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.3 of Table 133.

[0421] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 50 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.6 of said table 133 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0422] In the charge transportation layer coating liquid of example of comparison 50 example 50, the electrophotography photo conductor of the example of a

comparison was produced like the example 50 except not adding the compound of compound No.6 of Table 133.

[0423] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 51 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.12 of said table 134 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0424] In the charge transportation layer coating liquid of example of comparison 51 example 51, the electrophotography photo conductor of the example of a comparison was produced like the example 51 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.12 of Table 134.

[0425] On the aluminum cylinder with example 52 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.3 of said table 133 The eight sections Tetrahydrofuran The 200 sections [0426] In the sensitization layer coating liquid of example of comparison 52 example 52, the electrophotography photo conductor of the example of a comparison was produced like the example 52 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.3 of Table 133.

[0427] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 212.

[0428]

[Table 212]

[0429] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (15) are used together is explained from examples 53-56 and the examples 53-56 of a comparison.

[0430] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 53 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.5 of said table 135 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0431] In the charge transportation layer coating liquid of example of comparison 53 example 53, the electrophotography photo conductor of the example of a comparison was produced like the example 53 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.5 of Table 135.

[0432] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 54 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.23 of said table 136 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0433] In the charge transportation layer coating liquid of example of comparison 54 example 54, the electrophotography photo conductor of the

example of a comparison was produced like the example 54 except not adding the compound of compound No.23 of Table 136.

[0434] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 55 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.34 of said table 137 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0435] In the charge transportation layer coating liquid of example of comparison 55 example 55, the electrophotography photo conductor of the example of a comparison was produced like the example 55 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.34 of Table 137.

[0436] On the aluminum cylinder with example 56 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.5 of said table 135 The eight sections Tetrahydrofuran The 200 sections [0437] In the sensitization layer coating liquid of example of comparison 56 example 56, the electrophotography photo conductor of the example of a comparison was produced like the example 56 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.5 of Table 135.

[0438] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 213.

[0439]

[Table 213]

[0440] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (16) are used together is explained from examples 57-60 and the examples 57-60 of a comparison.

[0441] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 57 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.9 of said table 140 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0442] In the charge transportation layer coating liquid of example of comparison 57 example 57, the electrophotography photo conductor of the example of a comparison was produced like the example 57 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.9 of Table 140.

[0443] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 58 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.31 of said table 144 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0444] In the charge transportation layer coating liquid of example of comparison 58 example 58, the electrophotography photo conductor of the

example of a comparison was produced like the example 58 except not adding the compound of compound No.31 of Table 144.

[0445] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 59 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.54 of said table 148 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0446] In the charge transportation layer coating liquid of example of comparison 59 example 59, the electrophotography photo conductor of the example of a comparison was produced like the example 59 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.54 of Table 148.

[0447] On the aluminum cylinder with example 60 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.9 of said table 140 The eight sections Tetrahydrofuran The 200 sections [0448] In the sensitization layer coating liquid of example of comparison 60 example 60, the electrophotography photo conductor of the example of a comparison was produced like the example 60 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.9 of Table 140.

[0449] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 214.

[0450]

[Table 214]

[0451] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (17) are used together is explained from examples 61-64 and the examples 61-64 of a comparison.

[0452] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 61 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.4 of said table 150 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0453] In the charge transportation layer coating liquid of example of comparison 61 example 61, the electrophotography photo conductor of the example of a comparison was produced like the example 61 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.4 of Table 150.

[0454] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 62 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.16 of said table 152 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0455] In the charge transportation layer coating liquid of example of comparison 62 example 62, the electrophotography photo conductor of the

example of a comparison was produced like the example 62 except not adding the compound of compound No.16 of Table 152.

[0456] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 63 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.24 of said table 152 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0457] In the charge transportation layer coating liquid of example of comparison 63 example 63, the electrophotography photo conductor of the example of a comparison was produced like the example 63 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.24 of Table 152.

[0458] On the aluminum cylinder with example 64 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.4 of said table 150 The eight sections Tetrahydrofuran The 200 sections [0459] In the sensitization layer coating liquid of example of comparison 64 example 64, the electrophotography photo conductor of the example of a comparison was produced like the example 64 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.4 of Table 150.

[0460] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 215.

[0461]

[Table 215]

[0462] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (18) are used together is explained from examples 65-68 and the examples 65-68 of a comparison.

[0463] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 65 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.1 of said table 154 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0464] In the charge transportation layer coating liquid of example of comparison 65 example 65, the electrophotography photo conductor of the example of a comparison was produced like the example 65 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.1 of Table 154.

[0465] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 66 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.8 of said table 154 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0466] In the charge transportation layer coating liquid of example of comparison 66 example 66, the electrophotography photo conductor of the example of a

comparison was produced like the example 66 except not adding the compound of compound No.8 of Table 154.

[0467] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 67 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.18 of said table 155 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0468] In the charge transportation layer coating liquid of example of comparison 67 example 67, the electrophotography photo conductor of the example of a comparison was produced like the example 67 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.18 of Table 155.

[0469] On the aluminum cylinder with example 68 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.1 of said table 154 The eight sections Tetrahydrofuran The 200 sections [0470] In the sensitization layer coating liquid of example of comparison 68 example 68, the electrophotography photo conductor of the example of a comparison was produced like the example 68 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.1 of Table 154.

[0471] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 216.

[0472]

[Table 216]

[0473] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (19) are used together is explained from examples 69-72 and the examples 69-72 of a comparison.

[0474] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 69 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.5 of said table 157 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0475] In the charge transportation layer coating liquid of example of comparison 69 example 69, the electrophotography photo conductor of the example of a comparison was produced like the example 69 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.5 of Table 157.

[0476] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 70 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.13 of said table 159 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0477] In the charge transportation layer coating liquid of example of comparison 70 example 70, the electrophotography photo conductor of the

example of a comparison was produced like the example 70 except not adding the compound of compound No.13 of Table 159.

[0478] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 71 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.18 of said table 160 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0479] In the charge transportation layer coating liquid of example of comparison 71 example 71, the electrophotography photo conductor of the example of a comparison was produced like the example 71 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.18 of Table 160.

[0480] On the aluminum cylinder with example 72 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.5 of said table 157 The eight sections Tetrahydrofuran The 200 sections [0481] In the sensitization layer coating liquid of example of comparison 72 example 72, the electrophotography photo conductor of the example of a comparison was produced like the example 72 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.5 of Table 157.

[0482] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 217.

[0483]

[Table 217]

[0484] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (20) are used together is explained from examples 73-76 and the examples 73-76 of a comparison.

[0485] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 73 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.19 of said table 163 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0486] In the charge transportation layer coating liquid of example of comparison 73 example 73, the electrophotography photo conductor of the example of a comparison was produced like the example 73 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.19 of Table 163.

[0487] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 74 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.34 of said table 164 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0488] In the charge transportation layer coating liquid of example of comparison 74 example 74, the electrophotography photo conductor of the

example of a comparison was produced like the example 74 except not adding the compound of compound No.34 of Table 164.

[0489] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 75 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.64 of said table 164 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0490] In the charge transportation layer coating liquid of example of comparison 75 example 75, the electrophotography photo conductor of the example of a comparison was produced like the example 75 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.64 of Table 164.

[0491] On the aluminum cylinder with example 76 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.19 of said table 163 The eight sections Tetrahydrofuran The 200 sections [0492] In the sensitization layer coating liquid of example of comparison 76 example 76, the electrophotography photo conductor of the example of a comparison was produced like the example 76 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.19 of Table 163.

[0493] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 218.

[0494]

[Table 218]

[0495] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (21) are used together is explained from examples 77-80 and the examples 77-80 of a comparison.

[0496] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 77 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.12 of said table 165 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0497] In the charge transportation layer coating liquid of example of comparison 77 example 77, the electrophotography photo conductor of the example of a comparison was produced like the example 77 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.12 of Table 165.

[0498] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 78 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.42 of said table 166 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0499] In the charge transportation layer coating liquid of example of comparison 78 example 78, the electrophotography photo conductor of the

example of a comparison was produced like the example 78 except not adding the compound of compound No.42 of Table 166.

[0500] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 79 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.78 of said table 167 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0501] In the charge transportation layer coating liquid of example of comparison 79 example 79, the electrophotography photo conductor of the example of a comparison was produced like the example 79 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.78 of Table 167.

[0502] On the aluminum cylinder with example 80 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.12 of said table 165 The eight sections Tetrahydrofuran The 200 sections [0503] In the sensitization layer coating liquid of example of comparison 80 example 80, the electrophotography photo conductor of the example of a comparison was produced like the example 80 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.12 of Table 165.

[0504] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 219.

[0505]

[Table 219]

[0506] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (22) are used together is explained from examples 81-84 and the examples 81-84 of a comparison.

[0507] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 81 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.11 of said table 170 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0508] In the charge transportation layer coating liquid of example of comparison 81 example 81, the electrophotography photo conductor of the example of a comparison was produced like the example 81 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.11 of Table 170.

[0509] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 82 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.21 of said table 171 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0510] In the charge transportation layer coating liquid of example of comparison 82 example 82, the electrophotography photo conductor of the

example of a comparison was produced like the example 82 except not adding the compound of compound No.21 of Table 171.

[0511] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 83 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.29 of said table 172 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0512] In the charge transportation layer coating liquid of example of comparison 83 example 83, the electrophotography photo conductor of the example of a comparison was produced like the example 83 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.29 of Table 172.

[0513] On the aluminum cylinder with example 84 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.11 of said table 170 The eight sections Tetrahydrofuran The 200 sections [0514] In the sensitization layer coating liquid of example of comparison 84 example 84, the electrophotography photo conductor of the example of a comparison was produced like the example 84 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.11 of Table 170.

[0515] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 220.

[0516]

[Table 220]

[0517] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (23) are used together is explained from examples 85-88 and the examples 85-88 of a comparison.

[0518] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 85 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.13 of said table 174 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0519] In the charge transportation layer coating liquid of example of comparison 85 example 85, the electrophotography photo conductor of the example of a comparison was produced like the example 85 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.13 of Table 174.

[0520] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 86 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.33 of said table 175 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0521] In the charge transportation layer coating liquid of example of comparison 86 example 86, the electrophotography photo conductor of the

example of a comparison was produced like the example 86 except not adding the compound of compound No.33 of Table 175.

[0522] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 87 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.50 of said table 176 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0523] In the charge transportation layer coating liquid of example of comparison 87 example 87, the electrophotography photo conductor of the example of a comparison was produced like the example 87 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.50 of Table 176.

[0524] On the aluminum cylinder with example 88 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.13 of said table 174 The eight sections Tetrahydrofuran The 200 sections [0525] In the sensitization layer coating liquid of example of comparison 88 example 88, the electrophotography photo conductor of the example of a comparison was produced like the example 88 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.13 of Table 174.

[0526] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 221.

[0527]

[Table 221]

[0528] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (24) are used together is explained from examples 89-92 and the examples 89-92 of a comparison.

[0529] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 89 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.4 of said table 179 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0530] In the charge transportation layer coating liquid of example of comparison 89 example 89, the electrophotography photo conductor of the example of a comparison was produced like the example 89 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.4 of Table 179.

[0531] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 90 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.18 of said table 180 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0532] In the charge transportation layer coating liquid of example of comparison 90 example 90, the electrophotography photo conductor of the

example of a comparison was produced like the example 90 except not adding the compound of compound No.18 of Table 180.

[0533] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 91 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.27 of said table 181 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0534] In the charge transportation layer coating liquid of example of comparison 91 example 91, the electrophotography photo conductor of the example of a comparison was produced like the example 91 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.27 of Table 181.

[0535] On the aluminum cylinder with example 92 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.4 of said table 179 The eight sections Tetrahydrofuran The 200 sections [0536] In the sensitization layer coating liquid of example of comparison 92 example 92, the electrophotography photo conductor of the example of a comparison was *(ed) like the example 92 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.4 of Table 179.

[0537] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 222.

[0538]

[Table 222]

[0539] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (25) are used together is explained from examples 93-96 and the examples 93-96 of a comparison.

[0540] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 93 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.12 of said table 183 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0541] In the charge transportation layer coating liquid of example of comparison 93 example 93, the electrophotography photo conductor of the example of a comparison was produced like the example 93 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.12 of Table 183.

[0542] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 94 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.13 of said table 1 The eight sections Compound of compound No.142 of said table 187 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0543] In the charge transportation layer coating liquid of example of comparison 94 example 94, the electrophotography photo conductor of the example of a

comparison was produced like the example 94 except not adding the compound of compound No.142 of Table 187.

[0544] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 95 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.186 of said table 188 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0545] In the charge transportation layer coating liquid of example of comparison 95 example 95, the electrophotography photo conductor of the example of a comparison was produced like the example 95 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.186 of Table 188.

[0546] On the aluminum cylinder with example 96 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.12 of said table 183 The eight sections Tetrahydrofuran The 200 sections [0547] In the sensitization layer coating liquid of example of comparison 96 example 96, the electrophotography photo conductor of the example of a comparison was *(ed) like the example 96 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.12 of Table 183.

[0548] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 223.

[0549]

[Table 223]

[0550] Next, the case where the compound shown by the general formula (1) as a charge transportation ingredient and the compound shown by the general formula (26) are used together is explained from examples 97-100 and the examples 97-100 of a comparison.

[0551] The electrophotography photo conductor of this invention was produced like the example 1 except having replaced with the charge transportation layer coating liquid of example 97 example 1, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

Compound of compound No.5 of said table 1 The six sections Compound of compound No.13 of said table 193 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The ten sections Tetrahydrofuran The 75 sections [0552] In the charge transportation layer coating liquid of example of comparison 97 example 97, the electrophotography photo conductor of the example of a comparison was produced like the example 97 except for the compound of compound No.5 of Table 1 except having used the compound 9 section of compound No.13 of Table 193.

[0553] The electrophotography photo conductor of this invention was produced like the example 2 except having replaced with the charge transportation layer coating liquid of example 98 example 2, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.13 of said table 1 The eight sections The compound of compound No.45 of said table 196 The two sections Polycarbonate (Teijin formation shrine make : panlight L-1250) The ten sections Methylene chloride The 80 sections [0554] In the charge transportation layer coating liquid of example of comparison 98 example 98, the electrophotography photo conductor of the

example of a comparison was produced like the example 98 except not adding the compound of compound No.45 of Table 196.

[0555] The electrophotography photo conductor of this invention was produced like the example 3 except having replaced with the charge transportation layer coating liquid of example 99 example 3, and having used the charge transportation layer coating liquid of the following presentation.

[Charge transportation layer coating liquid]

The compound of compound No.30 of said table 2 The four sections The compound of compound No.57 of said table 197 The four sections Polycarbonate resin (Mitsubishi Gas Chemical [Co., Inc.] make: You pyrone Z-300) The ten sections Methylene chloride The 50 sections 1,2-dichloroethane The 35 sections [0556] In the charge transportation layer coating liquid of example of comparison 99 example 99, the electrophotography photo conductor of the example of a comparison was produced like the example 99 except for the compound of compound No.30 of Table 2 except having used the compound 8 section of compound No.57 of Table 197.

[0557] On the aluminum cylinder with example 100 outer diameter of 70mm, the sensitization layer coating liquid of the following presentation was applied and dried, the monolayer sensitization layer with a thickness of 23 micrometers was formed, and the electrophotography photo conductor of this invention was produced.

[Sensitization layer coating liquid]

The charge generating ingredient of an example 4 The three sections Polycarbonate (Teijin formation shrine make : panlight K-1300) The 21 sections The compound of compound No.5 of said table 1 The ten sections Compound of compound No.13 of said table 193 The eight sections Tetrahydrofuran The 200 sections [0558] In the sensitization layer coating liquid of example of comparison 100 example 100, the electrophotography photo conductor of the example of a comparison was *(ed) like the example 100 except for the compound of compound No.5 of Table 1 except having used the compound 18 section of compound No.13 of Table 193.

[0559] About each electrophotography photo conductor obtained in an above-mentioned example and the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 224.

[0560]

[Table 224]

[0561] In the charge transportation layer coating liquid of example of comparison 101 example 1, the electrophotography photo conductor of the example of a comparison was produced like the example 1 except having replaced with the compound of compound No.5 of Table 1, and the compound of compound No.7 of Table 3, and having used the following structure expression (D) and the compound of (E).

[0562]

[Formula 90]

[0563] In the sensitization layer coating liquid of the example 102 <DP N=0237> example 4 of a comparison, the electrophotography photo conductor of the example of a comparison was produced like the example 4 except having replaced with the compound of compound No.5 of Table 1, and the compound of compound No.7 of Table 3, and having used the following structure expression (F) and the compound of (G).

[0564]

[Formula 91]

[0565] About each electrophotography photo conductor obtained in the above-mentioned example of a comparison, the photo conductor property was measured like the above. The result is shown in Table 225.

[0566]

[Table 225]

[0567] The electrophotography photo conductor of an example is high sensitivity, and even if it uses it many times repeatedly, there are few falls of electrification potential or sensibility, and the

electrophotography photo conductor of the example of a comparison is inferior in these either to there being no generating of the image defect of a copy or a record image or a greasing so that clearly from Table 27 - 52.

[0568]

[Effect of the Invention] By according to this invention, carrying out a charge transportation ingredient to a sensitization layer, and using combining said two kinds of specific compounds Even if it is high sensitivity and uses it many times repeatedly, the fall of electrification potential, the fall of sensibility, The electrophotography photo conductor excellent in repeat stability which has little generating of a rise of rest potential etc., and does not have degradation of sensitization layer membranes, such as film peeling of a sensitization layer and generating of a crack, and does not have generating of the image defect of a copy or a record image or a greasing can be obtained.

[Translation done.]